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Research Note

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Safety Belt Use in 2004 – Demographic Results

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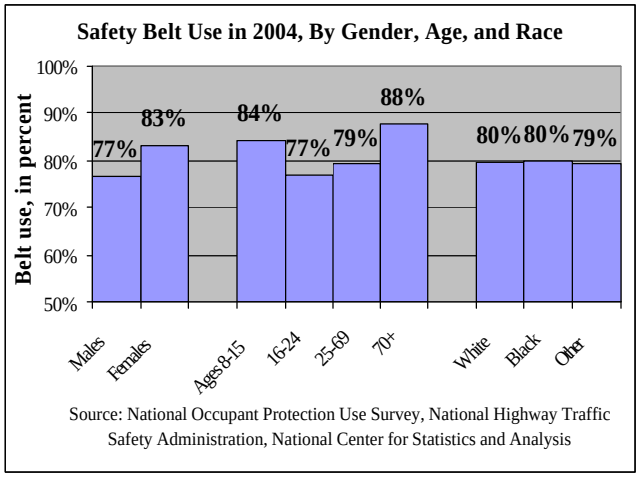
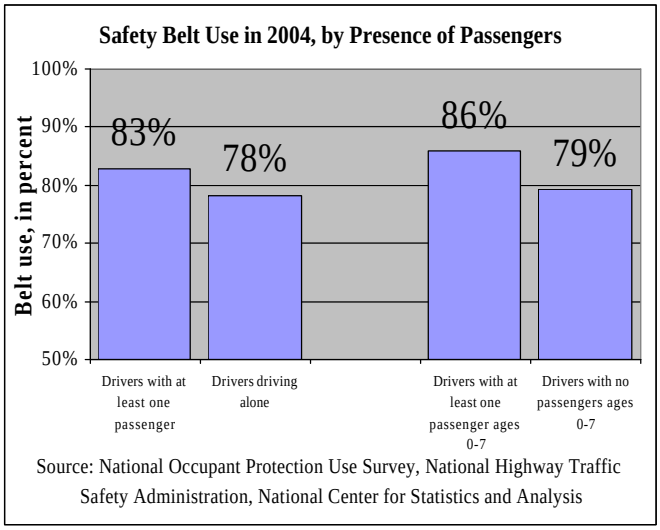
Drivers who have passengers, particularly children, are more likely to be buckled than those who do not. This result is from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on safety belt use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis in the National Highway Traffic Safety Administration (NHTSA).

Specifically the survey found that 86% of drivers with at least one child passenger between the ages of 0 and 7 were belted, compared to 79% for other drivers. Fully 83% of drivers with at least one passenger were belted, compared to 78% of drivers driving alone. The 2004 survey also found the following:

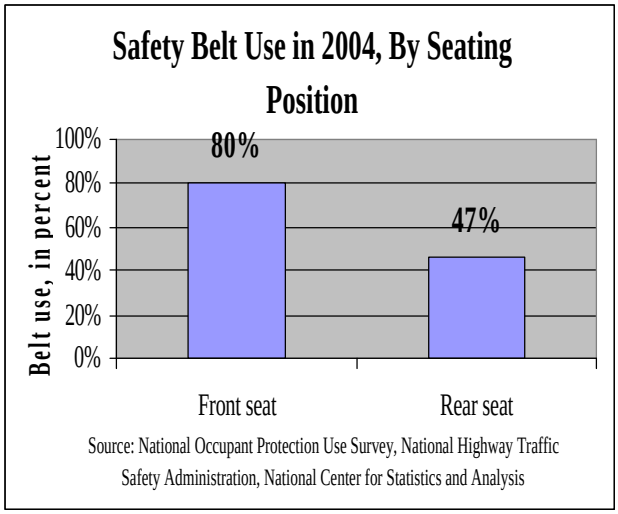
- Women continue to use safety belts more than men do. In 2004, 83% of female motorists were belted, compared to 77% for males.
- There continue to be no statistically significant differences in belt use among racial groups. In 2004, 80% of motorists characterized as White by roadside observers used safety belts, compared to 80% of those characterized as Black, and 79% of the remaining motorists.
- In the first observed nationwide probability-based estimate of safety belt use in the rear seat of passenger vehicles, NOPUS found that 47% of rear seat occupants were belted, compared to 80% in the front seat.



Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis



Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis



Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

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Safety Belt Use by Major Characteristics

Motorist Group[1]	2002		2003		2004		2002-2004 Change			2003-2004 Change		
	Belt Use[2]	Significantly High (H) and Low (L) Rates[3]	Belt Use[2]	Significantly High (H) or Low (L) Rates[3]	Belt Use[2]	Significantly High (H) and Low (L) Rates[3]	Change, in Percentage Points	Confidence in a Change in Use[4]	Percentage Reduction in Nonuse	Change, in Percentage Points	Confidence in a Change in Use[4]	Percentage Reduction in Nonuse
All Motorists	75%		79%		80%		5	**99%**	20%	1	20%	5%
Males	72%	L	77%	L	77%	L	5	**99%**	18%	0	0%	0%
Females	79%	H	84%	H	83%	H	4	**98%**	19%	-1	36%	-6%
Motorists Who Appear to Be[5]												
Ages 8-15	82%	H	81%		84%		2	46%	11%	3	55%	16%
Ages 16-24	69%	L	75%		77%		8	**99%**	28%	2	66%	8%
Ages 25-69	76%		80%		79%		3	**94%**	13%	-1	29%	-5%
Ages 70 and Up	82%	H	81%		88%	H	6	**97%**	37%	7	69%	37%
Motorists Who Appear to Be[5]												
White	76%		NA		80%		4	**96%**	17%	NA		
Black	77%		NA		80%		3	69%	13%	NA		
Members of Other Races	78%		NA		79%		1	29%	5%	NA		
Drivers of Vehicles in Which[6]												
They Are the Sole Occupant	NA		NA		78%	L	NA			NA		
There Is At Least One Passenger	NA		NA		83%	H	NA			NA		
Drivers Between the Ages of 16 and 24 of Vehicles in Which[6]												
They Are the Sole Occupant	NA		NA		78%		NA			NA		
Right Front Seat Passenger is Between 16 and 24	NA		NA		78%		NA			NA		
Right Front Seat Passenger is Not Between 16 and 24	NA		NA		78%		NA			NA		
Drivers of Vehicles in Which[6]												
There Is At Least One 0-7 Year Old Passenger	83%	H	NA		86%	H	3	78%	18%	NA		
There Are No 0-7 Year Old Passengers	75%	L	NA		79%	L	4	**98%**	16%	NA		

Motorist Group[1]	2002		2003		2004		2002-2004 Change			2003-2004 Change		
	Belt Use[2]	Significantly High (H) and Low (L) Rates[3]	Belt Use[2]	Significantly High (H) or Low (L) Rates[3]	Belt Use[2]	Significantly High (H) and Low (L) Rates[3]	Change, in Percentage Points	Confidence in a Change in Use[4]	Percentage Reduction in Nonuse	Change, in Percentage Points	Confidence in a Change in Use[4]	Percentage Reduction in Nonuse
Motorists Ages 16 and Older in Vehicles in Which[6]												
There Is At Least One 0-7 Year Old Passenger	82%	H	NA		84%	H	2	68%	11%	NA		
There Are No 0-7 Year Old Passengers	75%	L	NA		79%	L	4	**99%**	16%	NA		

[1] Drivers and right-front passengers observed between 8 AM and 6 PM in passenger vehicles having no commercial or government markings that are stopped at a stop sign or stoplight. Estimates are adjusted to reflect use rates on general roadways.
[2] Shoulder belt use.
[3] Rates flagged with an "H" or "L" are statistically high or low in their category at a 90% confidence level.
[4] The degree of statistical confidence that the 2004 use rate is different from the 2003 or 2002 rate.
[5] Based on the subjective characterization of roadside observers.
[6] Among passengers in the right front seat and the second row of seats.
NA: Data not collected or not sufficient to produce a reliable estimate.
Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Safety Belt Use in the Rear Seat in 2004 by Major Characteristics

Motorist Group[1]	Rear Seat Belt Use[2]	Significantly High (H) and Low (L) Rates[3]
All Motorists (Ages 8 and Up)	47%	
Males	47%	
Females	46%	
Motorists Who Appear to Be[4]		
Ages 8-15	70%	
Ages 16-24	NA	
Ages 25-69	59%	
Ages 70 and Up	70%	
Motorists Who Appear to Be[4]		
White	46%	
Black	46%	
Members of Other Races	52%	
Motorists Governed by Laws Requiring[5]		
Belts Used in All Seating Positions	72%	
Belts Used in the Front Seat Only	NA	

[1] Up to two passengers observed in the second row of seats between 8 AM and 6 PM in passenger vehicles having no commercial or government markings that are stopped at a stop sign or stoplight.
[2] Shoulder belt use.
[3] Rates flagged with an "H" or "L" are statistically high or low in their category at a 90% confidence level.
[4] Based on the subjective characterization of roadside observers.
[5] Laws pertaining to motorists ages 18 and older, in effect at the time the survey was conducted.
NA: Data not sufficient to produce a reliable estimate.
Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Occupant Protection Use Survey (NOPUS) is the only probability-based observational survey of safety belt use in the United States. The survey observes usage as it actually occurs at a random selection of roadway sites, and so provides the best tracking of safety belt use in this country.

The survey data is collected by sending observers to a set of probabilistically sampled intersections controlled by a stop sign or stoplight, where motorists are observed from the roadside. Data are collected between the hours of 8 AM and 6 PM. Only stopped vehicles are observed to permit time to collect the variety of information required by the survey, including subjective assessments of motorists' age and race. Observers collect data on the driver, right front passenger, and up to two passengers in the second row of seats. Observers do not interview motorists, so that the NOPUS captures the untainted behavior of vehicle occupants. The 2004 NOPUS data were collected between June 7 and July 11, 2004, excluding the period July 2-5. The smaller number of vehicles (and motorists) observed in the 2003 survey reflects a data collection period shortened for budgetary reasons.

Sites, Vehicles, and Motorists Observed

Numbers of	2002	2003	2004
Sites Observed	1,200	1,100	1,200
Vehicles Observed	37,000	27,000	38,000
Motorists Observed[1]	48,000	35,000	52,000
Front Seat	48,000	35,000	49,000
Rear Seat	0	0	3,000

[1]Estimates do not sum to totals due to rounding.

Although the data were collected solely from vehicles stopped at intersections controlled by a stop sign or stoplight, the estimates in this publication concerning safety belt use in the front seat reflect use by motorists *in transit* on *all*

types of roadways. This is accomplished by making adjustments using data from another portion of the survey that observes belt use in vehicles in transit on general roadways.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant increases in safety belt use between 2002 and 2004, or between 2003 and 2004, are identified in the table "Safety Belt Use by Major Characteristics" by a result that is 90% or greater in column 9 or 12, respectively. Significantly high and low levels of safety belt use, such as the lower use by male motorists, compared to females, are identified by H's and L's in columns 3, 5, and 7 in the table "Safety Belt Use by Major Characteristics", and in column 3 of "Safety Belt Use in the Rear Seat by Major Characteristics". Such comparisons are made within categories, such as age group, delineated by solid horizontal lines in the tables.

The NOPUS uses a complex multi-stage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. See the NHTSA Technical Report referenced below for more information on these procedures.

We measure improvement in safety belt use rates by the percentage reduction in belt nonuse. For instance, an increase from 90% to 95% represents a 50% reduction in nonuse (i.e. nonuse was cut in half, from 10% nonuse to 5% nonuse). This provides a better measure of improvement than a straight percentage or percentage point increase in use, since e.g., a 10-point jump in use is considerably easier starting at 50% use than at 80% use, because a greater percentage of belt nonusers must be converted to users at the 80% rate. In fact, while not entirely accurate, given that motorists may use belts at some times and not others, it can be helpful to think of the percentage reduction in nonuse as the percent of nonusers who were "converted" to users.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc. under the direction of the National Center for Statistics and Analysis in NHTSA under federal contract number DTNH22-00-D-07001.

Definitions

Motorists observed in the survey were counted as "belted" if they appeared to have a shoulder belt across the front of their body. NOPUS does not observe the use of lap belts because these restraints cannot be reliably observed from the roadside.

Not all vehicles on the road today have shoulder belts in the rear seat. Based on vehicle registration data from the National Vehicle Population Profile, R.L. Polk & Co., we estimate that 79% of passenger vehicles on the road today have shoulder belts in the rear outboard seating positions. In the 21% of vehicles with only lap belts in the rear outboard seats, all rear seat motorists would be counted by NOPUS as not using shoulder belts, regardless of whether they are using lap belts. Consequently the NOPUS rear seat shoulder belt use estimates reflect both the degree to which motorists use restraints and the prevalence of shoulder belts in these seating positions.

The racial categories "Black", "White", and "Other Races" appearing in the tables reflect subjective characterizations by roadside observers regarding the race of motorists. Likewise observers' recorded the age group (8-15 years; 16-24 years; 25-69 years; and 70 years or older) that best fit their visual assessment of each observed motorist.

At the time the 2004 survey was conducted, 18 States, the District of Columbia, and Puerto Rico required all motorists 18 and older to use safety belts when riding in the rear seat.

States with Laws Requiring Motorists Ages 18 and Older to Use Safety Belts in All Seating Positions[1]			
Alaska	Idaho	New Mexico	Vermont
Arizona	Kentucky	Oregon	Washington
California	Massachusetts	Rhode Island	Wisconsin
Delaware	Montana	South Carolina	Wyoming
District of Columbia	Nevada	Tennessee	Puerto Rico

[1] Laws as of July 2004.

For More Information

For detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, see the upcoming publication "Safety Belt Use in 2004 – Demographic Analysis", expected to be available at the website http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html in the Spring of 2005.

The NOPUS also observes other types of restraints, such as child restraints and motorcycle helmets, and observes driver cell phone use. This publication is part of a series that presents overall results from the survey on these topics. Please see other members of the series, such as "Child Restraint Use in 2004 – Overall Results", and the corresponding NHTSA Technical Report "Child Restraint Use in 2004 –Analysis", for the latest data on these topics.